

Controlling Violent Offenders Released to the Community: An Evaluation of the Boston Reentry Initiative

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Abstract

Despite the high level of funding and policy interest in prisoner reentry, there is still little rigorous scientific evidence to guide jurisdictions in developing reentry programs to enhance public safety, particularly for managing those who pose the greatest safety risks. The Boston Reentry Initiative (BRI) is an interagency initiative to help transition violent adult offenders released from the local jail back to their Boston neighborhoods through mentoring, social service assistance, and vocational development. This study uses a quasi-experimental design and survival analyses to evaluate the effects of the BRI on the subsequent recidivism of program participants relative to an equivalent control group. We find that the BRI was associated with significant reductions – on the order of 30 percent – in the overall and violent arrest failure rates.

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Introduction

The incarceration rate in state and federal prisons grew by nearly 240 percent between 1980 and 2001, (Blumstein and Beck 2005) and the number of prisoners released from incarceration increased in tandem. In 2001, some 630,000 prisoners were released from state and federal prisons; this figure is four times higher than the number of prisoners released in 1981 (Harrison and Karberg 2003). America's jail populations also experienced dramatic growth. From 1980 to 2005, the number of jail inmates per 100,000 U.S. residents rose from 81 to 256. At midyear 2006, 766,010 inmates were held in the Nation's local jails, up from 747,529 at midyear 2005 (Sabol and Harrison 2007). Since jail inmates typically serve sentences with lengths less than one year, jail populations rapidly return to their communities.

Regrettably, the American correctional system does little to prepare these inmates for life after release. For instance, many inmates do not participate in work assignments while incarcerated, (Atkinson and Rostad 2003) and the proportion of prisoners participating in vocational and educational programs just before their release declined between 1991 and 1997 (Lynch and Sabol 2001). Not surprisingly, recidivism rates among released inmates are very high. The most recent national study of recidivism rates among state prisoners found that more than two-thirds were rearrested for one or more serious crimes within three years of release (Langan and Levin 2002). Recidivism rates among recently released jail inmates have been noted to be higher (Beck 2006). To increase public safety in communities faced with large numbers of returning inmates, the U.S. Government has invested \$100 million in developing prisoner reentry programs and, in his 2004 State of the Union Address, President Bush called for an additional \$300 million to provide jobs, transitional housing, and community support for returning prisoners (Travis 2005). The Second Chance Act, recently signed into law, reauthorizes and revises an existing federal reentry program, provides funds to states for reentry programs, and supports non-profit organizations that provide transitional services to recently released inmates. Despite the high level of program funding and policy interest, there is still little rigorous scientific evidence to guide jurisdictions in developing reentry programs that enhance public safety by improving the chances of the successful reintegration of offenders into the community (Travis and Visser 2005a).

The Boston Reentry Initiative (BRI) is an interagency initiative to prevent former violent offenders from engaging in criminal behavior by helping them transition from the Suffolk County House of Correction back to their Boston neighborhoods. As such, in contrast to the majority of correctional programs, the BRI targets the most serious end of the offending distribution. The BRI attempts its ambitious goal by developing individual plans to reintegrate them into society during their incarceration and, once released, continuing this work in the community through the focused attention of a mentor. Caseworkers and mentors draw on a variety of programs to support the transition, including social service assistance (such as substance abuse and mental health treatment) and vocational development (such as training, education, and resume development necessary to secure employment).

In this paper, we use a quasi-experimental design to evaluate the crime prevention effects of the BRI by using survival analysis models to compare the recidivism patterns of BRI participants relative to the recidivism patterns of an equivalent control group. The evaluation results suggest that the BRI program was effective at reducing recidivism by significantly increasing the length of time between release from jail and subsequent arrest.

Section I: Literature Review

The dramatic increase in the number of inmates released each year from prison and jail has been well documented by numerous policy analysts and scholars (Harrison and Beck 2003; Langan and Levin 2002; Lynch and Sabol 2001; Petersilia 2000; Piehl et al. 2003; Taxman et al. 2001; Travis et al. 2001). In 1970, approximately 150,000 prison inmates were released back to their

communities that year. This number increased to over 630,000 released in 2002 (Travis 2005). Prison incarceration rates quadrupled over this time period and remain high, with some 1.4 million adults in state and federal correctional institutions in 2002 (Langan and Levin 2002). Between 1980 and 2006, the jail population also more than quadrupled from 183,988 inmates to 766,010 inmates.¹ Since all jail inmates and more than 95 percent of those incarcerated in state and federal prisons are eventually released (Hughes et al. 2001; Travis et al. 2001), the increasing number of former inmates returning to their communities is not a surprising trend. Released prisoners commit crimes at higher rates than the general population, and, in recent media accounts, criminologists and police experts have been quoted as attributing rising crime rates in some cities to large numbers of released convicts returning from prison (Rosenfeld et al. 2005).

A recent Urban Institute roundtable noted that, while there has been substantial momentum around the issue of reentry from state and federal prisons, there has been little attention paid to the issue of reentry from local jails, despite the fact that jails process more than 12 million admissions and releases each year (Osborne and Solomon 2006). Much of our knowledge of reentry issues is drawn from studies of prison populations. Jails serve as a point of entry to the criminal justice system as well as a point of release and return to the criminal justice system. According to Beck (2006), jail populations have swelled due to increasing use of jails for housing by other authorities, rising number of pre-trial detainees, growth in the number of felons sentenced to jail, and growth in the number of community supervision violators. The mean time expected to be served by jail inmates is nine months, and the median time served is five months (Beck 2006). In 2002, jail inmates were serving sentences for a wide variety of offenses, including violent crimes (25 percent), property crimes (24 percent), drug crimes (25 percent), public-order offenses (25 percent) and other offenses (1 percent) (James 2004). At the time of admission in 2002, 34 percent of admissions were on probation (up from 28 percent in 1989) and 13 percent were on parole (up from 10 percent in 1989) (James 2004).

A key challenge in shaping policies and practices to reintegrate ex-prisoners back into their communities is dealing with the risk factors associated with recidivism (National Research Council 2008). Empirical research studies reveal important associations between particular offender characteristics and an increased likelihood of recidivism. The long list of individual risk factors includes: age, gender, race, gang membership, substance abuse, antisocial behavior, low social achievement, negative peers, length of prior criminal history, and the number of years incarcerated before release (Belenko et al. 1998; Clear and Dammar 2000; Gendreau et al. 1996; Huebner et al. 2007; Langan and Levin 2002). Between 70 and 85 percent of inmates have substance abuse problems with associated physical and mental health needs (Petersilia 2000). In addition to substance abuse treatment needs, recently released offenders often have limited education and require assistance with housing, job skill development, and employment (Hagan and Coleman 2001; Petersilia 2000). Beck (2006) identified the following special needs for jail inmates: one third report regular crack or cocaine use, 1 in 8 report heroin or opiate use, 16 percent report past history of mental illness, one third report having a medical problem requiring attention at the time of admission, 14 percent report being homeless, 29 percent are unemployed, 46 percent had a family member previously incarcerated, 31 percent report one or both parents abusing drugs while growing up, and 44 percent grew up in single-headed households.

While individual risk factors are an important consideration, it is equally important for policy makers and practitioners to consider the communities to which ex-prisoners are returning. Former inmates generally return to urban communities with concentrated social, economic and political stressors such as high unemployment, active drug markets, limited social services, high crime and endangered public health, and homelessness (Brooks et al. 2005; Lynch and Sabol 2001; Petersilia 2000; Travis et al. 2001). Time served behind bars obviously results in periods of detachment from work, family, and other social networks (Petersilia 2005). There is some research evidence that suggests the frequent removal and reentry of offenders to and from these

disadvantaged communities further weakens social capital and informal social controls, resulting in less community safety (Putnam 2000; Rose and Clear 2002; Travis et al. 2001). However, at this point in time, our empirical understanding of the impact of incarceration on neighborhood social control is limited (Lynch and Sabol 2004). Community-level factors that impact successful transitions include the availability of housing, substance abuse treatment, behavioral and physical health services, and access to education and employment resources (Lynch and Sabol 2001; Petersilia 2000; Taxman et al. 2001; Travis et al. 2001). Limited employment opportunities and low wages also impede successful transitions among returning offenders, especially when offenders are in competition with the mainstream unemployed as well as those transitioning from public assistance (Lynch and Sabol 2001).

At present, there is little direct research evidence to inform jurisdictions on best practices in preventing recidivism by returning prisoners (National Research Council 2008; Petersilia 2000; Travis 2005). We do know, however, that in-prison programs designed to increase educational levels, job skills, and social functioning can reduce recidivism rates (Andrews et al. 1990; Cullen and Gendreau 2000) and these programs could be enhanced if linked to services in the community upon release (Gaes et al. 1999). For example, a recent study of an intensive 90-day aftercare program for offenders released from boot camp found that the aftercare treatment, which had a strong emphasis on rehabilitation and services, resulted in lower recidivism rates for participants compared to a control group of boot camp releases (Kurlychek and Kempinen 2006). Proper post-release supervision could reduce subsequent criminal offending through surveillance and by structuring released inmates lives so they are better connected to work, family, and support programs (Piehl and LoBuglio 2005). While there is evidence that tighter surveillance can increase our ability to detect violations and criminal behavior, (Petersilia and Turner 1993) we know little about the amount and types of contacts that could best facilitate a successful transition back to the community (Piehl and LoBuglio 2005). Policy analysts and advocates generally recommend that criminal justice agencies should work with public and private organizations to systematically reduce the risk of recidivism by assessing the public safety risk posed by each prisoner, developing in-prison and post-release plans that reduce the risk, and, through a consortium of reentry services, provide returning prisoners with “concentric circles of support” by working with families, employers, and community organizations (Travis and Visher 2005a: 256).

Obviously such a strategy represents a dramatic change to the policies of the current system of incarceration and would require a new set of institutional and agency relationships, the re-allocation of scarce resources, and new systems of accountability (Travis and Visher 2005a). Successful policies to re-integrate offenders into the community will require extensive collaboration among criminal justice organizations, human service agencies, and community partners supportive of returning prisoners and their families. Given the increased policy interest in prisoner reentry and the large amount of money being invested in this issue, there is a strong need to develop a better knowledge base to inform jurisdictions on what works in supporting successful transitions by ex-prisoners and improving our capacity to deal with the public safety risk posed by an increasing number of high-risk individuals returning to our communities.

Throughout the research literature and policy debate runs the question of how to target reentry efforts. That is, which programs are right for which inmates? There are several competing concerns. Some offenders may be unaffected by programmatic efforts, either because they are highly likely to desist or because they are highly likely to reoffend (Glaser 1964). If inmates can be influenced by reentry efforts, the gains are likely to be highest for those involved in violent activity, as these are so damaging to society. But, despite the potential benefits, it is frequently presumed that violent offenders are the most difficult to reach. Additionally, most reentry programs operate within institutional and political environments that constrain them to serve a narrow slice of the inmate population, generally those with short, nonviolent criminal

histories (Piehl et al 2003).

Section II: The Boston Reentry Initiative

In 2001, the Boston Police Department, (BPD) in partnership with the Suffolk County Sheriff's Department, (SCSD) implemented the BRI to focus criminal justice and social service resources on jail inmates who pose the greatest risks of committing violent crimes when released to the community. The initiative involves the collaborative efforts of social service providers, faith-based organizations, and additional law enforcement agencies. Each month, the BPD selects for participation in the BRI between 15 and 20 high risk inmates newly committed to the Suffolk County House of Correction (the local jail).² Relative to the programs funded under Serious and Violent Offender Reentry Initiative (www.svori.org), the BRI is among the larger scale reentry initiatives in the country.

Soon after their commitment, BRI participants are directly informed that institutional programs and community resources are available to aid their successful reintegration. A second message is that the jail inmates will be held accountable for staying away from further criminal activity upon release to the community. With the assistance of caseworkers and faith-based mentors, BRI inmates are required to develop a "transition accountability plan" that includes a wide range of "wrap-around" services customized to address their individual needs. The available services range from education and job skill development to substance abuse and mental health treatment to assistance in dealing with outstanding child support payments. These services are not unique; rather, mentors and agencies facilitate the receipt of these programs and services.

Mentors frequently meet with inmates on the day of release from jail. After that, mentors continue working with BRI participants to assist in acquiring basic needs such as employment and adequate housing, continuing ongoing substance abuse and mental health treatment, and avoiding the negative temptations of street life. While mentors craft individualized interventions, a typical BRI participant has 7.3 contacts with their mentors in the community and participates in 39.7 hours of programming; some 21 percent acquire employment in their first year of release from jail.³

The BRI selection process includes both objective and subjective criteria. The BRI targets male inmates who are between the ages of 17 and 34, reside in Boston, and are considered by law enforcement agencies to be at high risk for continuing their involvement in violent crime. Each month, the BPD's Boston Regional Intelligence Center (BRIC) scrutinizes the list of offenders entering the Suffolk County House of Correction and makes subjective recommendations about who should be enrolled in the program. The selected individuals usually are involved in ongoing gang conflicts and are expected to return to communities with high-rates of violent crime. These individuals almost always have extensive criminal backgrounds including violence, firearm offenses, and gang associations.

Within 45 days of entering the facility, program participants attend a BRI panel session, during which representatives from criminal justice agencies, social service providers, and faith-based organizations sit in a semi-circle across from the new inmate participants. Each of the panel members addresses the inmates from the unique perspective of his or her organization. Representatives of social service and faith-based organizations describe the resources and support that they can provide to assist inmates with their transition back into the community, both while they are in the prison and post-release. Representatives of prosecution, probation, and parole departments discuss the consequences that await the inmates if they are caught recommitting crimes upon their return to their neighborhoods, often providing information individualized for that month's participants. Collectively they convey a unified message that the inmates have the power to choose their own destiny. At the same time, the panel serves to remind the inmates that they are not doing their time anonymously. The fact that information on their criminal histories,

current incarceration, and planned released dates is shared among law enforcement agencies and with some community agencies gives an impression of coordination among law enforcement that they are unlikely to have experienced before.

Following the panel, inmates are assigned jail-staff caseworkers and faith-based mentors from the community, who begin meeting and working with them immediately. Enrollments in education, substance abuse, and other institutional programs are coordinated as part of their transitional accountability plans. On the day of release, the institution arranges for either a family member or a mentor to meet them at the door. The returning prisoners are encouraged to continue to work with their caseworkers, mentors, and social service providers during their reentry periods. For those inmates who leave the jail on conditional supervision, such as those inmates serving a split sentence with a period of probation following their incarceration, the supervising agency is asked to incorporate participation in the BRI as part of their stipulations of release, which they invariably do.

The BRI builds on the foundation of interagency and community partnerships that contributed to a decrease in violent crime and improvement in police community relationships in Boston during the 1990s (Braga et al. 2001; Braga and Winship 2006). The BPD and SCSD developed partnerships with other law enforcement and criminal justice agencies to help identify the most serious offenders, to provide effective and coordinated post-release supervision whenever possible, and to vigorously prosecute BRI-identified inmates who recommit offenses. These partners include the state Department of Probation, the state Department of Correction, the state Parole Board, the Suffolk County District Attorney's office, and the U.S. Attorney's office.

Community-based and government agency partners provide participants in the BRI with extensive case management and treatment programming to assist their successful transition to law abiding and productive members of their communities. Each transition accountability plan charts out a recommended and coordinated regimen of treatment and supervision beginning at the House of Correction and continuing after release. These services address immediate issues - identification/drivers licenses, health insurance, shelter, transportation, clothing, interim job, and the like - as well as long term issues - substance abuse treatment, mental health treatment, education, career counseling, permanent housing, and so on. Many of these services are provided by partner agencies as part of their organizational missions. The Sheriff and the Police Departments also contract for additional services from these agencies, primarily to ensure slots for BRI participants. Case managers steer BRI offenders to programs that are "real" (functional) and have proven to be helpful in re-attaching them to the labor market and to their communities. These partners include local one-stop career centers, health commissions, community colleges, half-way house operators, and in the case of child support, the Massachusetts State Department of Revenue.

Faith-based organizations provide mentors to BRI-identified offenders both during their incarceration and post-release. The mentors meet with the offenders while they are still at the House of Correction and develop a rapport with them. The mentors, with salaries paid by the BPD, also participate in the development and implementation of the transition accountability plan. Mentors typically stay involved with BRI participants for 12 to 18 months after their release. If an offender has conditional supervision with probation or parole following release, the mentors will work with the offender's probation or parole officers. Also, the mentors provide the program partners with updated progress reports on the released offenders. The faith-based organizations bring credibility to the program - several of the staff members of these organizations have served jail and prison sentences - and offer offenders a tangible connection with the community. All of the faith-based organizations are located in the same neighborhoods to which these offenders will return. The specific faith-based partners of the BRI are the Ella J. Baker House, Bruce Wall Ministries, the Nation of Islam, and the Boston Ten Point Coalition.

Section III: Analytical Approach

The BRI was intended to enhance public safety by preventing recently released high-risk violent offenders from committing subsequent crimes in the community. A non-randomized quasi-experimental design was used to compare recidivism patterns among BRI participants to the recidivism patterns of an equivalent control group (Cook and Campbell 1979; Rossi, Lipsey, and Freeman 2006). Of course, there are many ways to measure recidivism (see Maltz 1984). These include an arrest for a new crime, convictions resulting from those arrests, returns to prisons for new convictions, and returns to prison for community supervision technical violations. Travis and Visher (2005b) suggest that only an arrest for a new crime constitutes an accurate reflection of recidivism while the other measures are importantly influenced by policy choices emanating from court decisions, sentencing policy, and community supervision enforcement.

Massachusetts Criminal Offender Record Information (CORI) data were used to measure prior offending and subsequent recidivism. CORI records include information on all arraignments resulting from an arrest and the associated dispositions (including convictions, sentences, and revocations of community supervision) in Massachusetts state and local adult and juvenile courts. Thus, any non-Massachusetts arrests or local arrests prosecuted in Federal court would not be captured. For the treatment and control subjects, we examined CORI criminal history arrest data for up to the three years (1095 days) immediately following release from jail on their current conviction offense.⁴ Arrest events, the types of arrest crimes, and the time in days between release and a subsequent arrest event were recorded for all subjects.

A key challenge for any impact evaluation is the identification of an appropriate comparison group. The BPD and its law enforcement partners select a small number of highly-active violent offenders for the BRI from the monthly pool of Suffolk County House of Correction. As described above, the selection process involves objective criteria (age, sex, current conviction offense, and past criminal arrest history) and subjective criteria (police department intelligence on prior gang involvement and current gang disputes) to identify the highest risk offenders for the BRI treatment. This selection process makes program evaluation difficult since any contemporaneous control group will not be as high risk to fail. This is the opposite of the usual selection bias problem: in this case, the treatment group was negatively selected from the larger population. Therefore, to the extent that the BPD chooses well, a simple research design comparing participants to non-participants will be biased against finding a program effect.

The BRI was first implemented in 2001, with the program model evolving over time. In 2002, the first full year that all programmatic elements of the BRI were in place, 143 participated in the program. Because all who were thought to comprise the highest risk group were selected for the BRI, we look to an earlier cohort of inmates to construct the comparison group. Our initial pool contains the 1,141 Boston males between the ages 18 and 32 committed to the Suffolk County House of Correction in 2000 – prior to the existence of the BRI. In order to select those most similar to the BRI participants from this pool, we first collected criminal history arrest data and gang intelligence information for each member of this “2000 young male” pool as well as for the 2002 BRI program group. We used these data to represent the information that was available to the BPD and partnering criminal justice agencies at the time. Although this was an intensive data collection effort, the benefit was a large sample of potential comparison group members. Having such a large pool allowed us to use statistical methods that use the data to determine which inmates served as the best counterfactuals for the BRI participants, based upon information known to law enforcement at the time of entry to the jail.

Using Stata 8.2 statistical software, we executed propensity score matching routines to develop equivalent comparison and treatment groups from the untreated 2000 pool and 2002 BRI program group. Propensity score matching techniques attempt to create equivalent treatment and comparison groups by summarizing relevant pre-treatment characteristics of each subject

into a single-index variable (the propensity score) and then matching subjects in the untreated comparison pool to subjects in the treatment group based on values of the single-index variable (Becker and Ichino 2002; Rosenbaum and Rubin 1983). In our analysis, the pre-treatment characteristics considered in the propensity score matching analysis were age, race, current conviction offense, past gang association or membership, and past criminal arrest history.⁵

The propensity score analysis yielded five distinct groupings of offenders with very similar propensity scores. We selected the three groupings with the highest propensity scores; this exercise resulted in a 2002 BRI treatment group of 108 offenders matched to a 2000 comparison group of 309 offenders.⁶ We are fortunate to have a sizable N for the comparison group, as this increases the statistical power of the research design.⁷

As Table 1 reveals, there were no substantively important differences in the profile characteristics of the resulting treatment and comparison groups, indicating successful construction of the comparison group. A difference-of-group-means significance test found only one statistically significant difference in the set of covariates. The mean age of comparison group subjects was 22.1 years and the mean age of BRI subjects was 21.3 years. However, the 0.8 year difference was not substantively important in this analysis. While not statistically significant across the groups, BRI subjects were somewhat more likely to have a current conviction for violent offense, and a current or past arrest for a non-violent gun offense (i.e., an arrest for illegal gun possession).

Table 1: Comparison of Key Characteristics of Treatment and Control Group Subjects After Propensity Score Matching

	2002 BRI N = 108	2000 Control N = 309	Group Difference Test Values
Mean Age	21.3	22.1	2.68**
Mean Prior Arrests	8.1	7.9	-0.35
Percent Non-White	97.2	98.1	0.51
Percent Prior Gang Involvement	50.0	48.5	-0.26
Percent Current Violent Offense	46.3	42.4	-0.70
Percent Current Non-Violent Gun Offense	25.0	20.7	-0.93
Percent Current Drug Offense	37.0	36.6	-0.09
Percent Prior Arrest, Any Crime	100	100	0.00
Percent 2 or More Prior Violent Arrests	75.9	78.3	0.514
Percent Prior Non-Violent Gun Arrest	48.1	43.0	-0.92
Percent 3 or More Prior Drug Arrests	52.8	51.1	-0.29
<p>*$p < .05$ **$p < .01$</p> <p>Note: Difference-of-group-proportions (z scores) and difference-of-group-means (t values) hypothesis tests were used to compare the characteristics of treatment group subjects to control group subjects. Unequal variances were assumed in difference-of-group-means hypothesis tests.</p>			

While BRI mentors only worked with their clients for up to 18 months, we were interested in determining whether the program had any longer-term recidivism reduction effects on participants as well as any short-term effects. Therefore, we examined whether the treatment and control subjects were rearrested for any crime and for violent crime within three years of release. In our assessment of the effects of the BRI on time to recidivism for jail inmates released to the community, we used simple Kaplan-Meier group comparisons of survival times and Cox proportional hazard models (Lee 1992).⁸ Kaplan-Meier analyses examine the cumulative proportion surviving over the course of the study time period (in this case, without new arrest) in the treatment and control groups. The Kaplan-Meier procedure generates the log-rank test, which compares the number of observed terminal events in each group during the study time period with the expected number if there were no differences between the groups. Cox regression models are a standard method for modeling time-to-event data in the presence of censored cases. The Cox regression model allows modeling of a set of control variables and does not impose a distributional assumption on the underlying probability process of the time between release and any eventual recidivism. In this way, the Cox model is more robust than other duration-time methods, such as the exponential or Weibull models (Lee 1992).⁹ Participation in the BRI was measured as a dummy variable (0 = control group; 1 = BRI participant); other independent variables, such as age, race, current conviction offense, prior gang involvement, and prior criminal history measures, were included to control for any potential differences between the treatment and control groups. The general Cox regression model used to calculate the hazard rate was as follows:

$$R(t) = h(t) \exp (X(t) a')$$

Where $R(t)$ stands for the rate of transition, $h(t)$ is the unspecified baseline hazard rate, and $X(t)$ is a vector of covariates, including the BRI treatment dummy variable and control variables. The coefficients were expressed as hazard ratios (i.e., exponentiated coefficients). A hazard ratio of 0.90 would indicate that a one-unit increase in an independent variable was associated with a 10 percent decrease in the hazard rate, or the propensity for failure (Lee 1992).

Section IV: Results

Figures 1 and 2 present graphs of the Kaplan-Meier cumulative failure rates for the BRI treatment and comparison groups for any arrest and violent arrest after release from jail, respectively. Both graphs show consistently lower failure rates for the BRI treatment group relative to the comparison group. The log-rank statistic confirmed that post-release time-to-arrest for BRI subjects was significantly different from the control subjects for all crimes ($p=.0039$) and for violent crimes ($p=.0309$). After one year post-release, 36.1 percent of BRI participants had been arrested for a new crime while 51.1 percent of control group subjects had been arrested for a new crime (Figure 1). The differences between the groups narrowed somewhat over time. After two years post-release, 67.6 percent of BRI participants had been arrested for a new crime while 78.0 percent of comparison group subjects had been arrested for a new crime. After three years post-release, 77.8 percent of BRI participants had been arrested for a new crime while 87.7 percent of comparison group subjects had been arrested for a new crime.¹⁰

Violent cumulative failure rates presented a similar picture over the study time period. After two years post-release, 20.4 percent of BRI participants had been arrested for a new violent crime while 34.6 percent of comparison group subjects had been arrested for a new violent crime. After three years post-release, 27.8 percent of BRI participants had been arrested for a new violent crime while 39.2 percent of comparison group subjects had been arrested for a new crime. Even after three years, BRI participants were 30 percent less likely to have been rearrested for a violent crime. Indeed, the overall arrest rates and violent arrest rates for BRI participants are high. This is not too surprising, however, given that the BPD and their criminal justice partners select the highest-risk violent young males in Boston committed to jail to participate in the BRI program.

Figure 1: Kaplan-Meier Cumulative Failure Rates

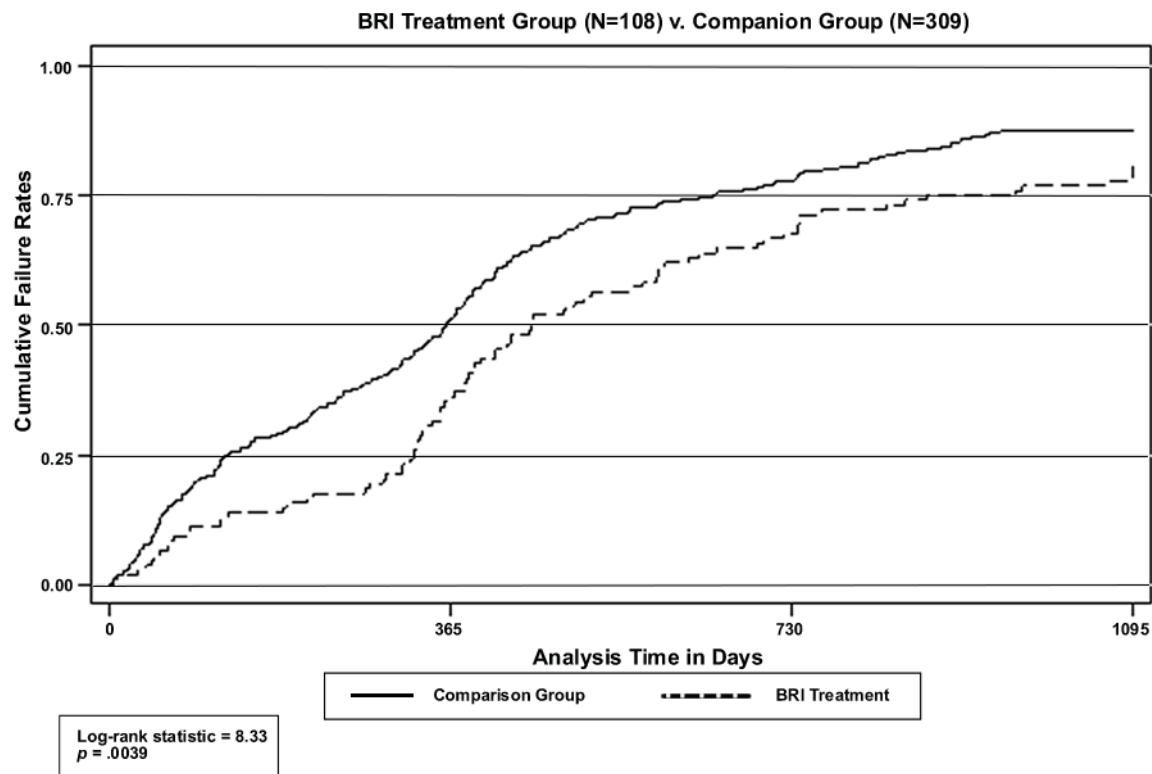


Figure 2: Kaplan-Meier Cumulative Violence Failure Rate

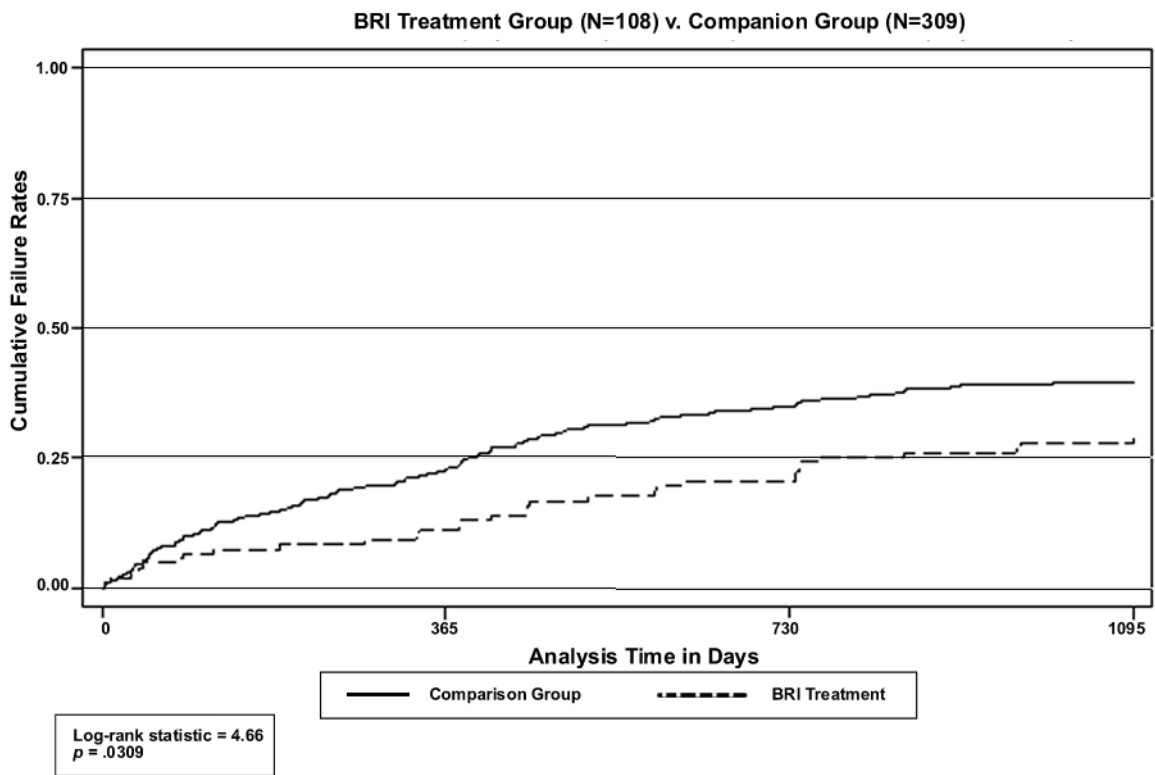


Table 2 presents the results of the Cox regression models assessing the effects of the BRI treatment on time-to-failure. The BRI treatment was associated with a statistically significant 32.1 percent ($p = .002$) reduction in the subsequent overall arrest hazard rate. This result remained robust when the individual-level control variables for age, race, prior gang involvement, and prior criminal history were added to the Cox regression model (31.1 percent reduction, $p = .003$). The BRI treatment was also associated with a statistically significant 37.1 percent ($p = .032$) reduction in the subsequent violent arrest hazard rate. The violent recidivism reduction effect was generally robust when the individual-level control variables were added to the Cox regression model (33.8 percent reduction, $p = .046$),¹¹ with a slightly larger estimated effect than for overall recidivism.

Table 2: Cox Regression Models Estimating the Effects of the BRI on Recidivism Hazard Rates (N = 417)

	Any Arrest		Violent Arrest	
	Model 1	Model 2	Model 1	Model 2
BRI	0.679**	0.689**	0.629**	0.662*
Standard Error	0.085	0.086	0.128	0.136
Z	-3.09	-2.95	-2.27	-2.00
$P > Z $	0.002	0.003	0.023	0.046
<i>Control Variables</i>				
Age		1.032		1.027
Race		0.524		0.845
Prior Gang		1.073		1.288**
Current Gun		0.910		0.790
Current Violent		0.852		0.889
Current Drug		1.087		0.847
Number of Prior Arrests		0.996		0.979
Prior Gun		0.865		1.208
2+ Prior Violent		0.966		0.932
3+ Prior Drug		0.732*		0.932
Model Chi-Square	10.15**	29.27**	5.64*	15.12
Degrees of Freedom	1	11	1	11
Log Likelihood	-1901.57	-1892.00	-882.66	-877.92

* $p < .05$

** $p < .01$

Note: Age was coded as 18 - 24 (reference category or 0) and 25 - 32 (1). Race was coded as non-white (0) and white (1). Gang association was coded as "no prior hit on gang database" (0) and "prior hit as an associate or gang member" (1). Current conviction offense was coded as a multi-category dummy variable: violent offense, non-violent gun offense, drug offense, or other (property or disorder crime was reference category). Prior drug offense arrests were coded as "3 or more" (1) or not (0), prior violent crime arrests were coded as "2 or more" (1) or not (0), and prior non-violent gun offenses were coded as "1 or more" (1) or not (0).

In both Cox regression models, most of the control variables did not have statistically significant effects on the propensity of these high-risk offenders to fail in the community. There is little variation within the subjects in the treatment and control pools; as all were very high-risk offenders, this is unsurprising. Nonetheless, these results provide some support for the model, in particular from the positive coefficients on gang membership and prior violent offenses in the violent recidivism Cox regression model. The finding that gang membership is associated with higher recidivism is consistent with an emerging body of studies that have found that gang members released from custody experience an elevated risk of recidivism, even within samples of “chronic offending” or “high-risk” peers (Huebner et al. 2007).¹²

Conclusion

This evaluation of the Boston Reentry Initiative has several remarkable features. Foremost, the BRI targeted the most difficult offenders (young, with violent criminal histories). These are precisely those offenders who are likely to be excluded from most reentry efforts. As a result, the evaluation challenge is to construct a comparison group that is not biased against a program effect. Propensity score methods were used to choose members of an earlier cohort to serve as a comparison group. Relative to the comparison group subjects, BRI participants were found to have 30 percent lower rates of recidivism. Not only is it possible to provide services to this tough-to-reach population, it is possible to do so effectively.

The research presented here provides some much-needed evidence about the effectiveness of reentry programming for a particularly important target population: violent offenders at high risk of re-offending. These findings generally support the conceptual models of optimal reentry efforts that have generated so much attention in the literature and are influencing program design in many jurisdictions. Prisoner reentry scholars and policy advocates argue that public safety is the role of an integrated social system rather than one single agency. The integrated social system approach is advocated by national policy consortiums, such as the U.S. Department of Justice Reentry Partnership Initiative, and designed to better coordinate the provision of social services to ex-prisoners (Byrne et al. 2001; Taxman et al. 2001). Many prison and jail systems currently operate their prisoner and jail inmate reentry programs based on this principle. The BRI version of this holistic approach to recidivism reduction produces crime reductions; future research should determine the key preventive elements of the integrated social system model.

Gang membership presents a special policy challenge for prisoner reentry initiatives. The desistance literature, as highlighted by Huebner et al. (2007), suggests that gang membership impedes the ability of an inmate to reintegrate successfully after release from incarceration. Ongoing gang membership is believed to increase the likelihood of recidivism after release by limiting investments in prosocial bonds, providing additional opportunities to engage in negative peer interactions, and diminishing the ability of inmates to construct a “prosocial identity” once released from prison (Thornberry et al. 2003). Half of the participants in the BRI were gang members and, independent of participation in the program, this status was associated with an elevated risk for violent recidivism. Nevertheless, these findings suggest that individualized treatment plans, facilitated by mentors and supported by a network of criminal justice, social service, and community-based organizations, can positively impact gang-involved offenders returning to high-risk communities. Effective gang violence prevention policy should focus on developing programs that facilitate prosocial transitions for gang-involved inmates after release from incarceration.

Endnotes

¹<http://www.ojp.usdoj.gov/bjs/glance/tables/corr2tab.htm>

²Given limited resources, the BRI can handle a maximum of 20 inmates per month. No panels are selected in December and August each year due to extensive staff vacations during these months. This means that the BRI has about 150 new participants per calendar year.

³Mentor contact, employment, and programming figures were provided by SCSD Assistant Deputy Superintendent Greg Haugh and examined in an earlier assessment of BRI post-release outcomes (Tuller 2006).

⁴CORI records were captured as of June 2007. In the group of 2002 BRI participants examined below, the longest jail sentence time served was 26 months (March 2002 commitment to May 2004 release). All other 2002 participants had shorter sentences with 3 year post-release observation time periods that ended before the June 2007 data collection date. In the 2000 comparison group, discussed below, the longest jail sentence time served was 30 months. Therefore, all control group subjects in this study were observed for the full three years post-release observation period and none had censored spells of observation.

⁵For balancing properties to be satisfied in the propensity score matching analysis, the pre-treatment characteristics needed to be entered as dummy variables into the Stata 8.2 pscore routine (Becker and Ichino 2002). Age was coded as 18 – 24 (reference category or 0) and 25 – 32 (1). Race was coded as non-white (0) and white (1). Gang association was coded as “no prior hit on gang database” (0) and “prior hit as an associate or gang member” (1). Current conviction offense was coded as a multi-category dummy variable: violent offense, nonviolent gun offense, drug offense, or other (property or disorder crime was reference category). The distributions and graphical plots of prior criminal arrest history variables were examined and natural breaks in the data were used to form dummy variables. Prior drug offense arrests were coded as “3 or more” (1) or not (0), prior violent crime arrests were coded as “2 or more” (1) or not (0), and prior non-violent gun offenses were coded as “1 or more” (1) or not (0). The details of these analyses are available upon request from the authors.

⁶This method drops thirty-five inmates of the actual BRI participants from the analysis. These inmates either were poor choices for inclusion in the program or they were selected based on information unavailable to the researchers (such as a known vendetta against the inmate that would make them higher risk than their criminal history would suggest). Under either of these circumstances the propensity score routine would be unable to find appropriate matches based on the available data.

⁷With 108 subjects in the treatment group and 309 subjects in the comparison group, our research design had statistical power of 0.783 to detect a modest 15 percent difference between the groups at the conventional 0.05 two-tailed statistical significance level (see Lipsey 1990).

⁸Data that measure time until an event are known as survival data (Lee 1992). The purpose of survival analysis is to model the underlying distribution of the event-time variable and to assess the dependence of the event-time variable on the independent variables. Survival data are often censored, as they are in this project. In the analysis, time will be measured as days until failure or until the inmate is no longer observed. Survival analyses take censoring into account and correctly use the censored observations as well as the uncensored observations (see Maddala 1983).

⁹Cox regression models rely upon an assumption of proportional hazards (Hosmer and Lemeshaw 1999). We tested this assumption by including interaction terms for the independent variables and a function of time. None of the interaction terms were statistically significant, suggesting that these data meet the required assumption.

¹⁰Thirty-eight comparison group offenders were not arrested during the four year post-release study period. In fact, the last arrest of a control group offender occurred at 1011 days (2.77 years). In the BRI treatment group, the final single case failure was at 1071 days (2.93 years). Twenty-four BRI participants were never rearrested at 3 years post release. The names and dates-of-birth of the thirty-eight comparison group offenders and twenty-four BRI participants were run through BPD homicide victim records; no matches were made. Thus, greater homicide victimization cannot account for the differential in observed recidivism.

¹¹The Cox regression model for violent crime hazard rates with control variables did not fit the data (likelihood ratio chi-square = 15.1 with 11 degrees of freedom, $p = .1265$). As such, the hazard ratio should be interpreted with caution. However, given the results of the Kaplan-Meier analyses, simple Cox model without controls, and the congruent analytic findings for overall recidivism, we feel the weight of the available evidence suggests a notable positive program effect on violent recidivism.

¹²In the general recidivism Cox regression model, the dummy variable indicating that the subject had 3 or more prior drug arrests was associated with a 26.8 reduction in recidivism rates ($p < .05$). In Boston, criminal justice agencies make extensive use of advertisements of stiff Federal penalties for drug and gun crimes to deter high-risk populations from committing additional crimes (see, e.g. Braga et al. 2001).

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